Fall 9-1-2005

SCN 175T.02: Introduction to Physical Science

Ashley L. Preston
The University of Montana

Course Syllabus Tentative
FALL 2005 TTh
Introduction to Physical Science SCN175T

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Office Hours: MW 12:00-1:00; 5:00-5:40
Prerequistes or Co-requisites: MAT 005 (MAT100 suggested)
Class Section/Time/Place: Section _____ Time _____ Room _____

Course Description
This course is an introduction to science as a way of knowing, and in particular, the scientific worldview that is the foundation of Western cultures and lifestyles. It is a broad-based, integrated approach to the Physical Sciences including physics, astronomy, geology, environmental sciences, biology, and chemistry. Topics emphasized include: mechanics, thermodynamics, electricity and magnetism, the atom, quantum mechanics, basic chemistry, basic geology, and cellular and ecosystem biology.

Required Text
Trefil and Hazen. 2004. *The Sciences: An Integrated Approach*, 4th ed. Hoboken, NJ: John Wiley & Sons. ISBN: 0471219630

Course Objectives
Upon completion of this course, the student will be able to

1. Understand and evaluate the merit of basic scientific claims and/or findings encountered in education, the workplace, or the media.
2. Identify and differentiate between observations, hypotheses, theories, and laws.
3. Organize and interpret qualitative and quantitative data related to natural processes; identify and interpret patterns in processes or structures of nature; generalize and make predictions based on pattern recognition.
4. Identify and understand the basic concepts and principles of the different branches of science.

Assessment is based on testing, student portfolios, and class participation (see next page).

Students with Disabilities will receive appropriate accommodation. Please see me after class or in my office. Bring a letter from your DSS Coordinator.

Assessment /Grading
1. The **student portfolio** is expected to demonstrate an increasing ability to read, interpret, and evaluate current scientific research and publications.
2. Six **Unit Tests**
3. **Oral** Science News **Reviews** (see below)
4. A comprehensive **Final Exam**

Student Portfolio	10%
Unit Tests (6 @10% each)	60%
Oral Review/Science News	10%
Final Exam	20%
	100%

Grading Scale

A = 100-90%
B = 89-80%
C = 79-70%
D = 69-60%
F = 59% and below

Instructions for Science News Reviews

There are four objectives for these reviews.

1. To give the student an opportunity to follow/develop a personal interest in science.
2. To familiarize the student with the language and methods of professional science through the reading of ***peer reviewed*** journals.
3. To develop the ability to orally communicate scientific information to others.
4. Enable others to share in the research and findings of each individual member of the class.

The COT library has 2 publications that may be used for these reviews: *Science News* and *The Journal of the American Medical Association* (JAMA). *Science News* is also available online at: www.sciencenews.org If you have another **peer reviewed** journal that you wish to use, you MUST first run it by me.

Portfolio Assignments and Oral Reports

Students are expected to scan *Science News* **weekly** and to read and take notes on at least one *Science News* article. Other peer reviewed journals may also be used for your weekly review, but again, you MUST check with me first. The reviews are typed, (double-spaced) summaries of the article's main points. Reviews must be accompanied by copies of the article. They will be turned in as indicated on the schedule, and saved in the student portfolio. Several times throughout the semester, students will share their findings with the class, either as a whole or in groups as determined by the instructor.

Attendance and Participation

Attendance is required. Students are expected to attend every class, to come on time, and to hand in all competed work assignments on time. If you cannot make a test, you must see me BEFORE the test date, and you will be expected to make up the test BEFORE the regularly scheduled test date. Class participation is expected and will impact grades.

Class Schedule Fall 2005 MW
Tentative*

Week 1: 8/29-9/2	Introduction, Chapter 1, Handouts Chapter 2
Week 2: 9/5-9/9	Chapter 3 Science News; Finish Chapters; Review for Test I
Week 3: 9/12-9/16	**Test I**; Chapter 4 Chapters 4 and 5
Week 4: 9/19-9-23	Chapter 6 Science News; Finish Chapters; Review for Test II
Week 5: 9/26-9/30	**Test II**; Chapter 8 Chapters 8 and 9
Week 6: 10/3-10/7	Chapter 10 Finish Chapters; Review for Test III
Week 7: 10/10-10/14	**Test III**; Science News Chapter 11-12
Week 8: 10/17-10/21	Chapter 12-13 No class on 10/20
Week 9: 10/24-10/28	Science News; Finish Chapters; Review for Test IV **Test IV**; Chapter 17
Week 10: 10/31-11-4	Finish Chapter 17 (to page 423 only); Chapter 18 Chapters 18 and 19
Week 11: 11/7-11/11	Chapter 20; Review for Test V **Test V**; Science News
Week 12: 11/14-11/18	Chapter 22 Chapter 24; Science News
Week 13: 11/21-11/25	Chapter 25 Holiday
Week 14: 11-28-12/2	Finish Chapters; Science News; Review for Test VI **Test VI**; Science News
Week 15:	Catch-up; Science News; Review for Final

* The schedule is subject to change with as much notice as possible. You are responsible for keeping up with any changes that may be made via handouts or announcements in class.